

IN THE CLAIMS:

Claims 1-16 (Canceled)

Claim 17 (Original): A method of supporting an actuator element in a fuel injector having a body with an inlet port, an outlet port and a fuel passageway extending from the inlet port to the outlet port, a metering element disposed proximate the outlet port, an actuation element having a proximal end and a distal end, the proximal end being in operative contact with the metering element, a compensator having a plunger disposed in a sleeve with a clearance between the plunger and the sleeve, the compensator containing magnetically-active fluid disposed for movement within the compensator, and an electromagnetic coil, the method comprising:

changing the magnetically-active fluid in the compensator from a first state to a second state when a magnetic flux is generated; and

maintaining one end of the actuation element constant with respect to the compensator when the magnetic flux is generated.

Claim 18 (Original): The method according to claim 17, wherein the changing comprises changing a viscosity of the magnetically-active fluid from a first viscosity to a second viscosity greater than the first viscosity.

Claim 19 (Original): The method according to claim 17, wherein the changing comprises changing from a second state to a first state such that distortions of the fuel injector are compensated by the magnetically-active fluid in the first state.

Claim 20 (Original): The method according to claim 17, wherein the changing comprises reducing movement of the magnetically-active fluid in the compensator when the actuation element is actuated.

Claim 21 (Original): The method according to claim 17, wherein the maintaining further comprises providing at least one of a magnetostrictive member and piezoelectric stack so as to actuate the metering element.

Claim 22 (Original): The method according to claim 17, wherein the changing comprises energizing the electromagnetic coil so as to generate the magnetic flux.

Claim 23 (Original): The method according to claim 17, further comprising:
prestressing the magnetostrictive member with a predetermined prestress force; and
controlling flow of the magnetically-active fluid disposed in the compensator.